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EPA

Health and Safety Guidelines for EPA Asbestos Inspectors

(Revised)

Office of Administration
Safety, Health, and Environmental Management Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 29 1991

OFFICE OF
ADMINISTRATION
AND RESOURCES
MANAGEMENT

MEMORANDUM

SUBJECT: Revised Health and Safety Guidelines for Asbestos Inspectors

FROM: Julius C. Jimeno, Director
Safety, Health and Environmental Management Division

TO: Regional Administrators
Assistant Administrators
Laboratory Directors

The attached "Health and Safety Guidelines for EPA Asbestos Inspectors," revised in March 1991, were developed for use by EPA employees in carrying out the Agency's various missions to control asbestos exposures through inspection activities.

The two primary objectives for the Guidelines are:

- to provide for the health and safety of asbestos inspectors based on the best currently available information;
- to reduce the likelihood of significant asbestos exposures to the public through enhanced inspector guidance.

We will continue to analyze asbestos inspector health and safety issues and will develop revised guidelines in the future, as warranted.

The Safety, Health and Environmental Management Division (SHEMD), Office of Administration, is the lead office for development of these guidelines. Please keep Howard O. Wilson, Chief, Technical Assistance and Evaluation Branch or David Scott Smith, Chief, Policy and Resources Development Branch, SHEMD, advised of your experiences using the Guidelines. Your constructive comments on inspector health and safety issues are welcomed, and we encourage your input as additional experience is gained with our new guidance. Our FTS number is 382-3640.

Attachment
"Health & Safety Guidelines for EPA Asbestos Inspectors"

cc: Occupational Health and Safety Managers

HEALTH AND SAFETY GUIDELINES

FOR EPA ASBESTOS INSPECTORS

Revised March, 1991

Safety, Health and Environmental Management Division
United States Environmental Protection Agency
Headquarters
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PREFACE

These Guidelines were devloped by the Safety, Health, and Environmental Management Division for employees of the United States Environmental Protection Agency. They apply to EPA employees who manage or supervise EPA asbestos inspectors, and to EPA employees who perform asbestos inspections.

Beginning in 1989 and continuing through 1990, drafts of this document were circulated within EPA for internal review and comment. A number of changes to this document were made in response to questions and comments received from the reviewers. EPA Offices which were offered an opportunity to review and comment on the draft Guidelines included:

1) Office of Administration and Resources Management;
2) Office of Air and Radiation;
3) Office of Pesticides and Toxic Substances;
4) Office of Solid Waste and Emergency Response;
5) Office of Enforcement.

In addition, on March 4, 1991 the Environmental Assistance Division (EAD) (TS-799), Office of Toxic Substances (OTS) provided further comments about these Guidelines. In response to EAD's comments, the the following language is hereby incorporated into these Guidelines:

> "EPA recognizes that its safety and health managers, and other managers, have a responsibility to establish protective - yet practical - respiratory protection programs for their workers who engage in asbestos-related inspection activities. EPA managers are expected to: 1) ensure that EPA's asbestos inspectors and their supervisors are aware of their obligations to meet applicable OSHA requirements, and to ensure that their workers are properly trained, certified, and equipped; 2) establish respiratory protection programs for their asbestos inspectors which are consistent with the EPA asbestos program's (TS-799) policy, as described in the NIOSH/EPA "white book."
>
> EPA managers are encouraged to provide maximum levels of respiratory protection during asbestos-related work."

Questions about the Guidelines should be directed to:

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Health and Safety Guidelines for EPA Asbestos Inspectors

INTRODUCTION

These Guidelines are based on good health and safety practices and are designed to minimize the likelihood of illness or injury to EPA's asbestos inspectors. No set of guidelines can anticipate every situation or substitute for the sound judgment of properly trained professionals. However, these guidelines can be an effective tool for assuring that the Agency's mandate to conduct asbestos inspections is safely conducted.

Asbestos inspections are performed to determine compliance with environmental regulations including the National Emissions Standards for Hazardous Air Pollutants (NESHAP), Asbestos-in-School Toxic Substance Control Act (TSCA), and Worker Protection (TSCA). EPA inspectors who perform asbestos inspections may be involved in a variety of activities including: inspecting removal, demolition, distribution and abatement sites; inspecting manufacturing and fabricating operations; collecting bulk samples; inspecting emergency removals at Superfund sites; and inspecting abandoned buildings, among others.

These guidelines were prepared by the EPA's Safety, Health and Environmental Management Division (SHEMD) for EPA employees who are involved with EPA asbestos inspections. The SHEMD has no authority over contractors, contractor agents, assigns or employees; State agents, assigns or employees; or local government agents, assigns or employees in matters pertaining to asbestos exposures. However, the SHEMD encourages EPA program offices to include these Guidelines as minimum conditions of health and safety terms for contracts pertaining to asbestos inspection services, and as recommended guidelines for collaborating State and local government asbestos inspectors.

A. GENERAL REQUIREMENTS

1. Asbestos Inspector's Health and Safety Plan. A general Asbestos Inspector's Health and Safety Plan must be prepared by each EPA Regional Office and other EPA organizations involved in asbestos inspections. At a minimum, the Plan must include emergency procedures, personal protective equipment, and operational practices. The Plan must be transmitted to the appropriate safety committee for review and approval and then to the safety program manager and senior management official (e.g., the Regional Administrator) for their review and approvals.

   a. Emergency Procedures. The Plan must include procedures to be followed in: 1) medical emergencies, 2) accidental releases of asbestos, and 3) other emergency situations. For medical emergencies, the Plan must include the locations

and telephone numbers of the nearest medical emergency facilities and ambulance services. For asbestos releases, the plan must include procedures for notifying responsible building officials, as well as affected building occupants. For other emergency situations, the Plan must include provisions for identifying the emergency and non-emergency local phone numbers for the police department, the local fire department, and the nearest 24-hour poison control center. In all cases, the location of the nearest phone should be included to make the general plan site specific. The use of an inspection kit containing cards with phone numbers should be considered.

b. Personal Protective Equipment. The Plan must specify protective equipment requirements, including respiratory protection and protective clothing. The protective equipment required may vary depending on the type of inspection. For example, an inspector performing a NESHAP inspection at an abatement site may be required to wear self-contained breathing apparatus (SCBA) and a full body disposable suit. On the other hand, an inspector performing an Asbestos-in-Schools visual walk-through may not be required to wear any protective equipment because measurable exposure would be unlikely in situations in which no asbestos-containing materials (ACM) have been disturbed and where no asbestos-containing debris is present. The Plan must specify protective equipment recommendations for each type of inspection likely to be performed.

c. Operational Practices. The Plan must specify operational practices for each type of inspection likely to be performed. The operational practices may vary depending on the activities performed during the inspections.

2. Evaluation. The senior management official should assure that these Asbestos Inspectors' Health and Safety Plans are reviewed and revised as necessary at least annually.

3. Incident Reporting and Response. The appropriate program manager must coordinate the reporting and response to any incidents involving injury or illness, from asbestos for EPA's asbestos inspectors. Chapter 3 of the EPA's Occupational Health and Safety Manual details these reporting requirements and procedures [EPA #1440].

4. Training. All EPA employees engaged in asbestos-related field inspection activities must receive a minimum of 24 hours of approved basic occupational health and safety training; must accompany an experienced asbestos inspector for at least three days of directly supervised field activities; and must receive eight hours of approved, formal

refresher training annually. These, and additional requirements are described in EPA Order 1440.2, "Health and Safety Requirements for Employees Engaged in Field Activities." All EPA employees required to wear respirators must receive six hours of approved respiratory protection training, must be fit-tested at least semi-annually, and must receive approved refresher training annually, as described in EPA Order 1440.3. All EPA employees requested to enter hazardous waste sites or Superfund sites must receive the necessary training required under OSHA's regulation 29 CFR 1910.120.

5. Medical Monitoring. All EPA employees routinely engaged in field activities which are likely to result in exposure to toxic substances, or which require the use of respiratory protective equipment must be included in the Agency's Occupational Medical Monitoring Program. EPA Order 1440.2 requires that all EPA employees engaged in field activities be included in the medical monitoring program. EPA Order 1440.3 requires that all employees who wear respiratory protection be determined to be medically fit to wear respiratory protection.

6. Protective Clothing. The protective clothing needed may vary with the type of inspection and with the level of anticipated asbestos contamination. Personal protective clothing may not be needed for some inspections, such as a visual walk-through of a school where no abatement action is underway. On the other hand, a disposable suit, along with disposable gloves, head, and foot coverings may be needed where contamination of clothing is anticipated. Maneuvering into crawlspaces and inspecting asbestos removal operations inside the work area are examples of activities requiring such clothing.

After the inspection, the disposable suit, gloves, and head and foot coverings should be disposed of properly. If the site has a method for disposing of contaminated protective clothing, and the site manager agrees, disposal of contaminated clothing can be done at the site. If the site does not have an adequate method for disposing of contaminated materials, or if the site manager does not allow the EPA to dispose of materials at the site, then they must be sealed in properly labeled plastic bags and removed for proper disposal elsewhere. Disposable protective clothing must never be reused. Proper disposal of protective clothing prevents the spread of asbestos contamination to other areas.

7. Respiratory Protective Equipment. To provide asbestos inspectors with appropriate respiratory protection, respirators must be selected on the basis of the anticipated

levels of exposure that meet all OSHA requirements. When an anticipated exposure level cannot be determined, an unknown exposure condition exists. Such a situation requires the use of atmosphere supplying respirators such as a self-contained breathing apparatus (SCBA). Of currently available respiratory protective equipment, the SCBA offers the maximum level of respiratory protection.

Fortunately, much is known about the exposure conditions encountered at sites that are in compliance with current OSHA asbestos standards. When such circumstances are encountered by an inspector, they permit the initial selection o an air purifying respirator. The lowest acceptable level of respiratory protection to be used is that afforded by a NIOSH-approved full facepiece air-purifying respirator with HEPA filtration or any approved tight-fitting (i.e., having a tight face-to-facepiece seal) powered air-purifying respirator (PAPR) with High Efficiency Particulate Air (HEPA) filtration.

To assist in determining when air-purifying respirators can safely be used in conducting asbestos inspections, a study of exposure levels at renovation sites was conducted by Alliance Technology Corporation under contract to EPA. The study reviewed over 4000 air monitoring samples taken at renovation sites where, for the most part, OSHA requirements were met. It was undertaken to determine the parameters that had to be met to ensure that asbestos inspectors would be provided adequate protection when using air-purifying respirators.

The results of the study indicated that 95 percent of the time, when the OSHA asbestos standards for renovations conducted in schools, residential buildings, hospitals, offices, and industrial buildings were followed, no airborne concentrations in excess of 0.82 f/cc were present in the removal areas during active abatement i.e., the study that showed that the concentration would not exceed 0.82 f/cc 95% of the time. The data was based on Phase Contrast Microscopy (PCM) analyses. The OSHA 8-hour time-weighted-average (TWA) permissible exposure limit is 0.2 f/cc and the NIOSH-recommended exposure limit is 0.1 f/cc. Thus, before entering the envelope, if asbestos inspectors can make a determination of a project's OSHA compliance, an air-purifying respirator can be selected as shown in the following paragraph

The EPA's recommendations for respirator selections found in these Guidelines are intended to limit inspectors' exposures to asbestos to below 0.01 f/cc as an 8-hour time-weighted-average (TWA). These recommendations are based, in part, on expected inspection patterns such as not being in the envelope for more than two hours per day. The use of full facepiece air-purifying respirators or tight-fitting PAPRs

can provide such protection when used at sites that are in compliance with the OSHA asbestos standard and when inspectors spend no more than 2 hours per day inside the containment envelope. This conclusion is based on the following assumptions:

- o exposures at renovation sites that are in compliance with the OSHA asbestos standard do not exceed 2.0 f/cc more than 95% of the time (2.0 f/cc is the maximum level for which full facepiece APRs can reduce inspectors exposures to below 0.01 f/cc) lasting no more than a 2 hour exposure;

- o full facepiece air-purifying respirators (and tight-fitting PAPRs) provide a protection factor of 50X;

- o **inspectors will not be in the asbestos enclosure envelope for more than two hours per day.**

A 50X protection at a concentration up to 2.0 f/cc for two hours would result in an 8-hour TWA exposure of 0.01 f/cc. Actually, most exposures would be far less than 0.01 f/cc, since most individuals get much more than a 50X protection from full facepiece respirators (and PAPRs), and often they will not be in the envelope for two hours. Therefore, by following these recommendations, inspectors will have a high protection level because their exposure will most often be much less than 0.01 f/cc.

An abatement project's compliance with the OSHA asbestos standards can be gauged by findings that:

1) records on or off-site show that all employees have been trained as required by OSHA standards. When records are kept off-site, the inspector will request the supervisor to state that proper records exist and are available for review at a later date. [Passing an approved AHERA class is desirable but not required for buildings not covered by the AHERA regulations. Compliance with state and local training requirements should be checked.];

2) records (that can be made available at a later date) show that project employees have been given medical exams, including a determination that they are medically fit to wear respirators;

3) amended water is being used to wet the asbestos-containing material (ACM), [check to see that amended water is on-site outside the envelope];

4) no power tools are being used to remove ACM

5) the envelope is secure and no dust or debris appears to be coming from the removal area;

6) warning signs and adequately labeled containers are being used to remove the ACM;

7) a permit for disposal has been obtained from the state or local government;

8) employees are carefully removing ACM and are not dropping materials on the floor;

9) decontamination accommodations, including shower facilities, are in place;

10) existing monitoring data indicates that asbestos fibers in the work area do not exceed 2.0 f/cc as an 8-hour TWA;

11) there is a written respiratory protection program and respirators are being used;

12) a removal plan can be made available for review.

Determining that air-purifying respirators will provide adequate protection requires a certain degree of judgment. The ability to make such determinations must be obtained through both classroom and on-the-job training.

The buddy system is required in situations in which the SCBA-user is in an atmosphere that is either oxygen-deficient or is highly toxic and would be life-threatening in case of a respirator failure. Activities which would <u>not</u> result in a life-threatening or permanent injury situation would generally <u>not</u> require using the buddy system. A buddy system or appropriately outfitted assistant may be required in certain decontamination procedures. The decision to require a buddy system for decontamination would have to be made on a case-by-case-basis.

A Respirator Protection Program must be established in accordance with the OSHA standard for respiratory protection, 29 CFR 1910.134, the OSHA standards for asbestos, 29 CFR 1926.58 and 29 CFR 1910.1001, and EPA Order 1440.3 "Respiratory Protection".

Air-purifying respirators include Powered Air-Purifying Respirators (PAPR). These guidelines assume that tight-fitting PAPRs do not provide greater protection than do other air-purifying respirators due to the possibility that over-breathing (i.e., inhaling at a rate that is greater than the air supplied to the facepiece, resulting in a negative pressure in the facepiece) can occur. This guideline is based on workplace protection factors for PAPRs determined by NIOSH. This guideline

is consistent with the NIOSH Respirator Decision Logic of 1987 with respect to the protection offered by PAPRS. Additional PAPR studies are being planned by NIOSH. If they are shown to have higher protection factors in the future, appropriate changes will be made regarding selection of respiratory protection in this section.

EPA EMPLOYEES MAY NOT WEAR RESPIRATORS UNTIL THEY HAVE BEEN DETERMINED TO BE MEDICALLY FIT TO WEAR RESPIRATORY PROTECTION.

EPA EMPLOYEES SHOULD USE ONLY EPA-OWNED RESPIRATORY PROTECTIVE EQUIPMENT THAT THEY HAVE BEEN SPECIFICALLY TRAINED AND FIT-TESTED TO USE.

8. Other Personal Protective Equipment (PPE). It is recommended that eye protection be worn at all times in eye hazard areas (refer to EPA's Eye Protection Program Guidelines). Safety shoes or hard hat protection must be used where head or foot injury hazards can occur.

9. Prohibited Practices. Smoking, eating, drinking, chewing gum or tobacco, and applying makeup are prohibited in asbestos-contaminated areas.

10. Personal Hygiene. Personnel who have been in asbestos-contaminated areas must remove contaminated clothing, and other articles. Disposables should be properly bagged and discarded in landfills that are equipped to accept asbestos-containing materials. Personnel must wash their hands and faces thoroughly, or shower as appropriate. Employees should never eat, drink, apply makeup, chew gum or tobacco, or smoke before completing the decontamination process.

B. PROTECTIVE EQUIPMENT GUIDELINES FOR REMOVAL, DEMOLITION, AND RENOVATION INSPECTIONS.

EPA Asbestos Inspectors are required to inspect removal, demolition, and renovation sites under the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and the Asbestos Abatement Worker Protection Rule and other regulations.

1. Protective Clothing. EPA inspectors entering a removal, demolition, or renovation area should wear the following protective clothing:

- a disposable, full-body, hooded, outer coverall (e.g., a Saranex-coated Tyvek suit or equivalent). A coverall with an expandable back should be worn when SCBA is to be used;

- o a bathing suit (or equivalent) or an inner disposable coverall (when possible, particularly when a changing area or decontamination area is available, all street clothing should be removed before donning protective clothing. When clothing is removed, the inspector may choose to wear a bathing suit under the protective clothing. In situations where removing all street clothing is not possible, the inspector should roll up pants legs and sleeves and don an inner disposable coverall. The outer coverall is then worn over the bathing suit or inner coverall.);

- o disposable gloves (taped to the outer coverall);

- o disposable inner booties (e.g., Tyvek or equivalent);

- o disposable outer booties (taped to the outer coverall).

2. Respiratory Protection. EPA inspectors entering a removal, demolition, or renovation area should select the appropriate respiratory protection according to the following locations and conditions:

a. No respiratory protection is required outside of the asbestos area-enclosing envelope when:

   - o inspecting office area and other locations outside the barrier. All barrier seals must be intact, and all envelope entrances must have at least a double barrier. No visible airborne dust or debris that is potentially asbestos-contaminated should be present on any surface in the area; and

   - o secondary containment is in place during glove bagging operations. The secondary containment enclosure must be complete, and for all but small-scale, short-duration operations must also be under negative pressure;

   - o materials removed from the envelope have been cleaned and the pathway for removal of bags and equipment is clear and clean; and

   - o all ventilation systems in the envelope are off and sealed (this does not include negative pressure systems designed for the removal project); and

   - o wet methods are being used.

b. No respiratory protection is required inside the containment envelope when:

- o inspecting any restricted area that has already passed an appropriate clearance test (minimum of aggressive sampling demonstrating a concentration below 0.01 f/cc by PCM);

- o no removal work has begun and all ACM is intact, not disturbed, not damaged, and no debris is present.

c. Full facepiece air-purifying respirators or tight-fitting PAPRs shall be worn by inspectors when:

- o inspecting outside the barrier, and workers outside the barrier are wearing air-purifying respirators;

- o inspecting outside the barrier where the barrier is not complete and/or asbestos-containing debris is present;

- o inspecting inside the envelope when an inspection of the operation shows it to be in compliance with the OSHA asbestos standards. If, upon entering the envelope, visible emissions are seen or other evidence suggesting non-compliance is apparent, the inspector will <u>immediately</u> leave the area. Prior to returning to the removal area to document the violations, the inspector shall don SCBA gear;

- o inspecting inside the barrier and no active removal or disturbances have occurred in the past 24 hours and the inspection will not disturb any ACM.

d. Atmosphere-Supplying Respirators are required when:

- o performance of the asbestos abatement project is not in accordance with OSHA standards;

- o materials are being removed which are not being properly wetted, or removal causes the generation of significant levels of dust;

- o monitoring data at the site show levels in excess of 2.0 f/cc, or the EPA inspection may last for more than 2 hours;

- o others at the site are wearing atmosphere-supplying respirators.

C. PROTECTIVE EQUIPMENT GUIDELINES FOR ASBESTOS MANUFACTURING AND FABRICATING INSPECTIONS.

EPA asbestos inspectors are required to inspect asbestos manufacturing operations under the National Emissions Standards for Hazardous Air Pollutants (NESHAP).

1. Protective Clothing. The following protective clothing is recommended for EPA inspectors at manufacturing operations to prevent contamination of their street clothing:

- o a disposable, full body, hooded coverall (e.g., a Tyvek suit or equivalent) or a disposable, full body, hooded coverall with an expandable back to cover the air tank (if SCBA is required);
- o disposable shoe coverings;
- o a hard hat (if applicable);
- o eye protection (when respirators are not used); and
- o safety shoes (if applicable).

2. Respiratory Protection. EPA inspectors at manufacturing and fabricating operations should select respiratory protection based on employers' airborne fiber monitoring data (if available at the site). For exposure levels up to 2.0 f/cc, full facepiece air-purifying respirators or tight-fitting PAPRs shall be used for up to two hours of inspection time/day. If monitoring data is not available, the site is considered to be in violation of the OSHA standards. SCBA shall be used when the inspector cannot determine that exposures are likely to remain below 2.0 f/cc during the inspection.

Situations where excessive exposures may occur include:

- o loose asbestos materials are handled outside of an exhausted enclosure;
- o observing the accumulation on walls or surfaces, of any debris that may consist of friable asbestos-containing materials;
- o uncontrolled dumping, cutting, mixing, bagging, packaging, grinding operations or any type of fabrication where asbestos fibers may be emitted into the general air; and
- o in-plant transport of friable asbestos-containing materials that are not completely sealed.

Not all situations where the potential exists for excessive emissions of asbestos can be listed. Therefore, the inspector will have to use professional judgment to determine if an air-purifying respirator will provide adequate protection.

D. PROTECTIVE EQUIPMENT AND PROCEDURAL GUIDELINES FOR COLLECTING BULK SAMPLES.

EPA asbestos inspectors are required to collect bulk samples under the Asbestos-in-Schools Rule, Asbestos Worker Protection Rule, and the National Emissions Standards for Hazardous Air Pollutants.

1. Protective Clothing. EPA inspectors should wear the following protective clothing over their street clothes when collecting bulk samples (Note: when samples can be taken without any significant chance of releasing fibers, this clothing may not be necessary. Professional judgment must be used in such unusual cases.):

- a disposable, full body, hooded coverall (e.g., a Tyvek suit or equivalent);
- eye protection (if no full facepiece respirator is used);
- disposable shoe coverings;
- hard hat (if applicable); and
- disposable gloves.

2. Respiratory Protection. EPA inspectors collecting bulk samples should wear full facepiece air-purifying respirators with HEPA filter cartridges (this includes NIOSH-approved tight-fitting PAPRs equipped with HEPA filters).

3. Procedural Guidelines. These procedural guidelines are for inspectors who collect bulk samples in non-contaminated areas (e.g., Asbestos-in-Schools inspectors). These practices should be followed to minimize fiber release and building occupant concern.

a. Preliminary Steps.

- Discuss with building officials how the samples will be obtained and the rationale for selecting the sampling locations and the number of samples.

  Also discuss the advisability of notifying employees and/or their representatives prior to the inspection.

- Determine the equipment needed during the inspection to adequately access the area, (e.g., ladders, scaffolding).

- Determine the best time to obtain the samples in each area selected (i.e., times when few people are normally in the vicinity or passing through);

- Limit access to the area while samples are being collected. Post area(s) with appropriate signs or construct barricades, if necessary. Under no circumstances should samples be taken when school children or other unprotected individuals are present;

- Determine the minimum number of people needed in the affected area during sample collection, and limit access to that number. [These individuals may need to use PPE, depending on the asbestos inspector's assessment of the potential for asbestos fiber release];

- Determine how the area will be decontaminated should there be an accident (e.g., a piece of asbestos comes loose and drops to the floor). Be prepared to isolate the area and to damp wipe/mop the area, and/or have access to a HEPA vacuum;

- Based on the best information available, determine what PPE would be required in the event of an accident, under what conditions it will be worn and by whom.

b. Sampling Procedures.

- Sampling procedures must minimize the amount of the inspector's personal exposure to the asbestos. Also, these procedures must minimize the amount of disturbance of the asbestos material.

- Don appropriate protective clothing and respiratory protective equipment.

- Before the sample is collected, place a covering on the floor under the sample collection area.

- Spray the area to be sampled with a water mist or encapsulant mist prior to sampling to minimize release of fibers (e.g., use a hand-held plant mist sprayer).

- Sampling equipment, in most cases, will consist of plastic containers or empty film canisters and a sharp instrument such as a knife or scalpel. Once the samples have been obtained, the sampling equipment must be wiped thoroughly with a damp cloth. The outsides of the film canisters must be damp-wiped before being placed into the plastic bag. Whatever is chosen to wipe the sampling equipment and sample containers must be properly disposed of in plastic bags that are properly labeled. An encapsulant should be used to seal the hole made by the inspector while extracting the sample. The sampled surface should not be left in a worse condition than before sampling was done.

c. After Sampling.

- Wet-wipe the outside of the coveralls and shoe coverings. Remove coveralls, shoe covers, and gloves and dispose of them and the wipe down cloths as asbestos-contaminated wastes.

- Spray the respirator and respirator HEPA filters with water and dispose of the filters as asbestos waste.

- Dispose of all asbestos-contaminated materials properly.

- The asbestos samples must be packaged and shipped in a manner that assures that the sample containers will not release asbestos during transportation. **[Make sure the sample vials are securely taped shut and well-cushioned to prevent breakage.]**

E. PROTECTIVE EQUIPMENT GUIDELINES FOR INSPECTING ASBESTOS WASTE DISPOSAL AND STORAGE SITES.

EPA Asbestos Inspectors are required to inspect asbestos waste disposal and storage sites under the National Emissions Standards for Hazardous Air Pollutants (NESHAP). Before entering these sites, inspectors must have completed all OSHA training required as cited in 29 CFR 1910.120.

1. Protective Clothing. EPA inspectors should wear the following protective clothing over their street clothes when inspecting asbestos waste disposal and storage sites:

- a disposable, full body, hooded coverall (e.g., Tyvek or equivalent);

- disposable gloves; and

- disposable boots.

2. Respiratory Protection. EPA inspectors at asbestos waste disposal and storage sites should select respiratory protection based on the requirements of the approved site safety plan. This assumes that an approved site safety plan has been implemented.

When no approved site safety plan is in place, the inspector must have reviewed an appropriate generic site inspection plan for the site being inspected.

The absence of a site safety plan should be reported to appropriate persons in charge and possibly to the local OSHA area office.

a. No respiratory protection is required when:

- all disposal trenches have been covered for a minimum of 24 hours, no asbestos-containing materials are visible at the disposal site.

b. Full facepiece Air-Purifying Respirators or tight-fitting PAPR should be worn when:

- trenches are being dug at the disposal site and airborne dust is not visible;

- asbestos materials are visible on the ground or floor of the site, or bags or drums containing asbestos are damaged but airborne dust is not visible; and

- inspecting a storage site, as long as airborne dust is not present.

c. Atmosphere-Supplying Respirators (e.g., SCBA or supplied air respirators (SAR) should be worn when:

- others at the site are wearing atmosphere-supplying respirators; or

- airborne dust is visible at the site.

F. PROTECTIVE EQUIPMENT GUIDELINES FOR INSPECITNG EMERGENCY REMOVAL OPERATIONS AT SUPERFUND SITES.

EPA inspectors are required to inspect emergency removals at Superfund sites under CERCLA.

1. Protective Clothing. EPA inspectors should wear the following protective clothing while inspecting emergency removal

operations at Superfund sites:

- a disposable, full body, hooded, outer coverall (e.g., a Saranex-coated Tyvek suit or equivalent). A coverall with an expandable back should be worn with SCBA;

- a bathing suit (or equivalent) or an inner, full body, inner coverall. (When possible, particularly when a changing area or decontamination area is available, all street clothing should be removed before donning protective clothing. When clothing is removed, the inspector may choose to wear a bathing suit under the protective clothing. In situations where removing all street clothing is not possible, the inspector should roll up pants legs and sleeves and don an inner disposable coverall. The outer disposable coverall is then worn over the bathing suit or inner coverall;

- disposable gloves (taped to the outer coverall);

- eye protection (when no full facepiece respirators are worn);

- disposable inner booties;

- disposable outer boots (taped to the outer coverall); and

- hard hat (if applicable).

2. Respiratory Protection. EPA inspectors at an emergency removal operation should select the appropriate respiratory protection according to the following conditions:

a. No Respiratory Protection is required when:

- in the Support Zone (i.e., the noncontaminated or clean area).

b. Air-Purifying Respirators should be worn when:

- in the Exclusion Zone or the Contamination Reduction Zone, when acceptable to the On-Scene-Coordinator (OSC) and no airborne dust is visible.

c. Atmosphere-Supplying Respirators should be worn when:

- airborne dust is visible, for example during windy conditions or during operations that disrupt the asbestos; or
- others at the site are wearing atmosphere-supplying respirators.

G. PROTECTIVE EQUIPMENT GUIDELINES FOR INSPECTING AN ABANDONED BUILDING.

1. Protective Clothing. EPA personnel should wear or carry with them the following protective clothing while inspecting an abandoned building:

- a disposable, full body, hooded coverall (e.g., a Tyvek suit or equivalent);
- disposable shoe coverings;
- eye protection (if no full facepiece respirators are worn);
- disposable gloves; and
- hard hat (if applicable).

If any suspect materials are visible on floors or surfaces, the protective clothing should be worn.

2. Respiratory Protection. EPA personnel inspecting an abandoned building should select the appropriate respiratory protection according to the following conditions:

a. No Respiratory Protection is required when:

- no suspect materials are present;
- intact suspect materials are present and no debris from those materials is observed.

b. Air-Purifying Respirators should be worn when:

- suspect materials are visible on the floors or surfaces;
- collecting bulk samples. (See Section D for specific guidelines for collecting bulk samples.)

H. OPERATIONAL PRACTICES FOR ENTERING AND EXITING SITES.

Although the operational practices in this section are aimed primarily at removal, demolition, and renovation sites, these practices can be easily modified to fit the conditions for other types of inspections.

1. Wearing an SCBA When a Three-Stage Decontamination System is Present. The three-stage decontamination system discussed here consists of a clean room, a shower area, and an equipment room (or equivalent). A detailed description of this type of

decontamination system, commonly used in the asbestos abatement industry, can be found in the OSHA asbestos regulation, 29 CFR 1926.58, Appendix F.

a. Before entering the Clean Room:

- Make sure SCBA is operating properly;

- Make sure you have all materials necessary to conduct the inspection safely (e.g., duct tape, disposable towels, protective clothing, respirator, extra plastic bags, spray bottle, etc.) All materials that must be carried into the contaminated area should be sealed in a plastic bag to minimize contamination;

- If you take a camera into the contaminated area, precautions must be taken to minimize contamination or to decontaminate the camera. Possible solutions include using a waterproof camera or sealing a conventional camera in an impermeable clear camera box. Both of these methods are used by SCUBA divers.

b. In the Clean Room:

- Remove all street clothing including socks and underwear and store them in a clean, sealed plastic bag. The bag should be placed in a secured area. If desired, don a bathing suit (or equivalent) and inner booties. [Inspectors may prefer to have the bathing suit on before going to the site.];

- With the air flow valve closed, don SCBA; let the respirator facepiece hang from the neck with the aid of a strap;

- Don disposable outer coveralls with expandable back, but do not zip it;

- Don disposable outer boots. Use duct tape to attach the boots to the legs of the outer coveralls;

- Fit the respirator facepiece to the face, tighten the facepiece straps, and check seal;

- Connect hose to regulator and turn air valve on;

- Fit the coverall hood snugly around the respirator facepiece;

- Zip up the suit;

- Don the disposable gloves. Use duct tape to attach the gloves to the sleeves of the outer coveralls;

- Proceed to the Shower Area.

c. In the Shower Area:

- Leave disposable towels (sealed in a plastic bag) near the shower.

- Proceed to the contaminated area and perform inspection.

d. Before leaving the contaminated area:

- HEPA vacuum (if possible) and wet wipe all visible debris from protective clothing. (Use a spray bottle and disposable towels to wet wipe the suit.) Proceed to the equipment room.

e. In the Equipment Room:

- Seal all contaminated nondisposable materials in a plastic bag and remove them for decontamination at a later time.

- Remove outer protective clothing including boots, gloves, and coverall and place them in a proper container for disposal.

- With SCBA, bathing suit, and inner booties still on, proceed to the Shower Room.

f. In the Shower Area:

- Thoroughly shower down with the SCBA, bathing suit, and inner booties still on. Once totally wet, remove the respirator, turn off the air supply valve, clean the respirator, and place the respirator outside the shower on the clean side;

- Continue showering. While in the shower, remove inner booties and place them in a proper container for disposal. Next, remove bathing suit, thoroughly rinse it, and place it in a plastic bag. Finish showering by thoroughly washing the entire body with soap and water;

- Proceed to the Clean Room.

g. In the Clean Room:

- Dress into street clothes. All disposables should be given to the site operator if she/he will accept them and if they will be disposed of in an approved landfill. Otherwise, place the disposables in labeled plastic bags and remove them for proper disposal.

2. Wearing an SCBA When a Shower is Not Present or Available.

a. Before entering the contaminated area:

- Make sure SCBA is operating properly;

- Make sure materials necessary to conduct the inspection safely (e.g., disposable towels, extra plastic bags, spray bottle, etc) are on hand. All materials that must be carried into the work area should be sealed in a plastic bag to minimize contamination;

- If a camera is to be taken into the contaminated area, precautions must be taken to minimize contamination or to decontaminate the camera. Possible solutions include using a waterproof camera or sealing a conventional camera in an impermeable box. Both of these methods are used by SCUBA divers;

- Leave all street clothing on. (Short sleeved shirts and short pants are preferable to long sleeved shirts and long pants. If wearing long pants or long sleeves, roll them up.);

- Don an inner disposable coverall and inner booties (e.g., a Tyvek suit or equivalent) over street clothes;

- With the air flow valve closed, don the SCBA; let the respirator facepiece hang from the neck with the aid of a strap;

- Don disposable outer coverall with expandable back, but do not zip it up;

- Fit the respirator facepiece to the face, tighten the facepiece straps and check face seal;

- Connect hose to regulator and turn on air valve;

- Fit the coverall hood snugly around the respirator facepiece;

- Zip up suit;

- Don the disposable gloves. Use duct tape to attach gloves to the sleeves of the outer coverall;

- Proceed to the contaminated area and perform inspection.

b. Before leaving the contaminated area:

- Standing near the exit, HEPA vacuum (if possible) and wet wipe all visible debris from the outer protective clothing. (Use a spray bottle containing water and disposable towels to wet wipe the suit; use plenty of water.) Place all disposable materials in a proper container for disposal. Standing at the doorway inside the work area, remove outer protective clothing and immediately step outside the area.

c. Outside the contaminated area:

- Once outside, thoroughly wet wipe and mist spray the SCBA and inner protective clothing. Move away from the doorway and remove the SCBA and the inner protective clothing. Place all disposable materials in a proper container for disposal.

- Seal all contaminated nondisposable materials in a plastic bag and take them with you for decontamination at a later time.

3. Wearing an Air-Purifying Respirator When a Three-Stage Decontamination System is Present. The three-stage decontamination system discussed here consists of a clean room, a shower area, and an equipment room (or equivalent). A detailed description of this type of decontamination system, commonly used in the asbestos abatement industry, can be found in the OSHA asbestos regulation, 29 CFR 1926.58, Appendix F.

a. Before entering the Clean Room:

- Make sure that all materials necessary to conduct the inspection safely. (e.g. duct tape, disposable towels, protective clothing, respirator, extra plastic bags, spray bottle,

etc.) have been obtained. All materials that must be carried into the contaminated area should be sealed in a plastic bag to minimize contamination;

- If a camera is to be taken into the contaminated area, precautions must be taken to minimize contamination or to decontaminate the camera. Possible methods include using a waterproof camera or sealing a conventional camera in an impermeable clear camera box. Both of these methods are used by SCUBA divers.

b. In the Clean Room:

- Remove all street clothing including socks and underwear and store them in a clean, sealed plastic bag. If desired, don a bathing suit (or equivalent) and inner booties. Inspectors may prefer to have the bathing suit on before going to the site;

- Don disposable, full body, hooded coverall. Do not put the hood on yet. Do not zip up suit, yet. Don other appropriate protective clothing. Use duct tape to attach the boots to the outer coveralls;

- Don respirator. The respirator straps should be worn under the hood. Perform positive and negative pressure checks as appropriate;

- Fit the coverall hood snugly around the respirator; zip up suit; attach gloves with duct tape;

- Proceed to the Shower Area.

c. In the Shower Area:

- Leave disposable towels (sealed in a plastic bag) near the shower.

- Proceed through the equipment room to the contaminated area and perform the inspection.

d. Before leaving the Contaminated Area:

- HEPA vacuum (if possible) and wet wipe all visible debris from protective clothing. (Use a spray bottle and disposable towels to wet wipe the suit.) Proceed to the equipment room.

e. In the Equipment Room:

- Seal all contaminated nondisposable materials in a plastic bag and remove them for decontamination at a later time;

- Remove protective clothing and place it in a proper container for disposal. Keep wearing the respirator;

- With respirator on, proceed to the shower area.

f. In the Shower Area:

- Thoroughly shower down with the respirator and bathing suit on. Remove respirator and clean it. Place it outside the shower on the clean side.

- Remove inner booties and place them in a proper container for disposal.

- Remove bathing suit, thoroughly rinse it, and place it in a plastic bag. Finish showering by thoroughly washing the entire body with soap and water.

- Dispose of towels as asbestos contaminated waste.

- Proceed to the clean room.

g. In the Clean Room

- Dress into street clothes.

- All disposables should be given to the site operator if she/he will accept them and if they will be disposed of in an approved landfill. Otherwise, place the disposables in labeled plastic bags and remove them for proper disposal.

4. Wearing an Air-Purifying Respirator When a Shower is Not Present or Available. Follow the guidelines listed in section 2, "Wearing a SCBA When a Shower is Not Present", substituting appropriate procedures for air-purifying respirators.

I. References

The following references provide additional information on the safe handling of asbestos.

1. A Guide to Respiratory Protection for the Asbestos Abatement Industry. EPA 560-OPTS-86-001, April 1986.

2. Guidance for Controlling Asbestos-Containing Materials in Buildings. EPA 560/5-85-024, June 1985.

3. Asbestos Fact Book. EPA, A-107/86-002, June 1986.

4. Guidance for Preventing Asbestos Disease Among Auto Mechanics. EPA, Office of Pesticides and Toxic Substance, Asbestos Action Program, June 1986.

5. Measuring Airborne Asbestos Following an Abatement Action. EPA 600/4-85-049, November 1985.

6. Guidance for Controlling Friable Asbestos-Containing Materials in Buildings. EPA 560/5-83-002, March 1983.

7. Asbestos-Containing Materials in School Buildings: A Guidance Document Parts 1 and 2. EPA

8. Quantification of Asbestos Airborne Emissions Associated with Renovation Projects. EPA Contract No. 68-02-4465 Alliance Technologies 1988 Draft Final Report.